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Passed March 1824
W. E. H
Dean

On
Hepatitis

By
Eldred W. Mobberley
Of
Frederick Town
Maryland

To
William Bradley Tyler M. D.

This is respectfully dedicated,
as but a small tribute for the many
Services he has rendered

The Author,

Hepatitis

The consideration of this disease has excited the pens of the most able men in the profession, and brought forth the exertions of others, in every respect well calculated to disperse the surrounding mists of the most intricate points, so as to render them comprehensible to the more ordinary capacities,

This need not excite our surprise when we reflect, on the importance of the organ and the extensive influence which it exerts over the humane system, and that in the study of morbid anatomy we have the Liver so often exhibited, disorganized in structure and deranged in function— a slight review, also, of the diseases peculiar to the country in which we live, will enable us to ascertain, that this is not the least frequent affection, with which the american

practioner has to contend.

On this subject, I shall not pretend to offer any thing new.— Such an attempt, in me, would be really absurd, particularly at this late period and after this subject has been so ably considered by such gentlemen, as above discribed.

Views of disease, unleſs founded on an intimate acquaintance with organization and function; the effects of derangement and also the liability of an organ or part affecting another when diseased either from contiguity or sympathy; cannot poſsibly be correct, and will not in the generality of cases, conduct us to happy terminations.—

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It may not, therefore, I am persuaded, be amiſs to premise a short account

of the Situation and Structure of the Liver, the better to understand the opinions deduced therefrom, respecting the diseases to which derangement in its structure and function gives rise.

The Liver is the largest organ, and I may add, one of the most important glands, in the body.– In proportion to its size is its importance and connection extensive throughout the whole system.– ungar

This important organ is found situated, principally, in the upper anterior and lateral part of the abdomen; occupying, completely, the right Hypochrondrium, the superior portion of the Epigastric and a small ~~porti~~ part of the left Hypochrondriac regions.–

In the Fœtus, the seat of the Liver is found to differ eſsentially from that

of the Adult,- In the Fœtus it is observed to occupy more of the left Side than of the right. About this time it is found occupying nearly as much of the left as the right Hypochondrium; gradually, as the child advances in years, changing its position from left to right, untill the fifth or Sixth year, when it is seen situated as above discribed;† from which it is not removed during life, unleſs diseased or under the influence of morbid action,-

The Liver is smooth, uniform and convex, on its upper Surface; on the lower, irregular and concave.- Its superior surface is in close contact with the convexity of the Diaphragm.- Its margin, in the Fœtus, is in contact with the abdominal muscles, because it falls lower than the margin of the ribs.- Its inferior con=

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† See the discription of the Situation of the Adult Liver.

-cave Surface receives the convex portion of the stomach, Duodenum and Colon.

A healthy adult Liver never extends lower than the margin of the ribs, except about the pit of the Stomach; but in the Fœtus, as already observed, it will be found quite different.- About the Third or fourth month, in the Fœtus, it will be seen to fill nearly the whole Superior portion of the cavity of the abdomen. In Short, it extends to the umbilicus," covers the Stomach, and is in contact with the Spleen. It has Two coats, viz proper and Peritoneal.

The Eighth month brings with it the development and growth of the other parts in proportion, about this time the Sternum begins to lengthen; the concavity of the Diaphragm is

increased; thereby, enabling the Liver to retire beneath the margins of the ribs.

The reflection of the Peritoneum from the surrounding parts upon the Liver forms its supporting ligaments, however, the Liver is not retained in its natural situation by these ligaments alone, for the abdominal muscles, as is the case with all the viscera contained within the abdominal cavity, give the chief support to that viscus. It also receives additional support from the Vena Cava, which receives two or three veins directly from its sub=stance.

The broad suspensory or falciform ligament is composed of two lam=ina of Peritoneum, which descends, from the middle of the Diaphragm

and end of the Sternum, to the superior convex surface of the Liver; it is then reflected to each side, to form the upper smooth coat.

The round or umbilical ligament of the Liver is formed, by the degeneration of the coats of the umbilical vein, which conveyed the florid blood from the Placenta into the veins of the Liver and system of the Fœtus. - It may be traced in its passage from the umbilicus, along the peritoneum, into the duplicature of the broad ligament, and into the Fossa umbilicalis.

The posterior surface of the Liver, where it is uncovered by the peritoneum, is in close contact with a portion of the Tendon of the Diaphragm; alike uncovered by

Peritoneum, around this place of contact, is reflected the Peritoneum, and forms, what is called, the Coronary ligament.

The Peritoneum is reflected from the Diaphragm, to each side of the Liver, and forms its right and left lateral ligaments.

The posterior part of the right lobe of the Liver, is found in contact with the right kidney, while the left, lies on the lesser end of the Stomach.

The great arch of the Colon, passes immediately under the Liver and in contact with it and the Gall bladder, the latter of which often gives it a yellow appearance, after death.—

The commencement of the Duodenum lies, also, in contact with the Gall

bladder; and is frequently, in like manner with the colon, found tinged with bile.- This bowel continues its course under the right lobe of the Liver untill it makes its turn, at which place, it is in contact with the Kidney.-

The degeneration of the umbilical vein forms, in the adult, the Ligamentum Teres, which, paſsing along the under concave Surface of the Liver, opposite to the broad Suspensory, on the upper convex Surface, forms the umbilical Fiſsure.- This fiſsure and the falciform ligament, descending from the Diaphragm, divide the Liver, into its Two great right and left lobes.-

There is running acroſs this fiſsure another, forming with it right angles.- This is called the Transverse fiſsure.- It re-

ceives all the principle veſsels of the Liver. In it, we see the Arteria Hepatica and Vena Portarum entering the Liver, and the Hepatic duct, paſsing out.- Near the middle of this fiſsure we observe Two prominences, which have received the appellation of Portæ or Gates: hence, the name of Vena Portarum has been given to this vein, which supplies the Liver with materials for the secretion of bile.- This vein divides into Two rectangular branches, which constitute the Sinus of the Vena Portarum, and occupies the chief part of this fiſsure.- These veſsels, viz. Hepatic artery, Vena portæ, and Biliary duct, in common with Nerves and absorbents, are enveloped by cellular substance, which receives a partial covering from the Peritoneum, and is called

the Capsule of Glisson; and by him, it was supposed to possess muscularity. This cellular investment proceeds with these vessels throughout their various ramifications in the substance of of the Liver.-

Besides the two great lobes of the Liver, formed by the umbilical fissure and falciform ligament, there are several smaller ones.- One of these, denominated the Lobulus Spigelii, is situated between the posterior part of the Transverse fissure and the Vena Cava; belonging more particularly to the right side, it receives a small blood vessel from the Vena portæ.

A process of the Lobulus Spigelii forms the Lobulus Caudatus.

The Lobulus Quartus or anonymous is found situated between the

umbilical fissure and the depression for the reception of the Gall bladder.

On the posterior margin, between the left Lobe and the Lobulus Spigelii and right lobe of the Liver, is observed a Sulcus, called the posterior fissure.- It gives lodgement to the Ductus Venosus, which we find, in the Adult, degenerated into a cord.

There is seen, in the Liver, a Fourth fissure, which is designed for the reception of the great ascending Cava, and is distinguished from the rest by the name of Fissura Vena Cava and is found passing between the Lobulus Spigelii and the posterior part of the right lobe.

After the preceding remarks, we are naturally brought to the consideration of those blood vessels which go to the Liver.

The first, and One of the most

important of which, is the Hepatic Artery. This is a very considerable branch of the Cœliac, and as before suggested, it penetrates the Liver at the great Transverse fissure. Previous to its division and entrance into the Liver, it gives off branches which go to supply the Pyloric orifice of the Stomach, the Duodenum and Pancreas;† besides, several small branches pass from it to the ~~Vena porta~~. This Artery communicates with the Hepatic veins, Biliary duct, and Vena portarum, as has been ascertained by injection.‡ It enters the Liver and ramifies minutely in its substance.

The Vena portarum, which constitutes the great peculiarity of the organ now under consideration, enters the Liver at its portæ, enveloped in

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fter the division of this artery at the great fissure, the right branch, which sup right lobe of the Liver, is of course the largest, This branch sends off one to t e bladder which is called the Cystic artery
Wistar tom ij page 130 ‡ Ibid

Glissons Capsule, in common with all the vessels within that Sheath. - This vessel is composed of all those veins which correspond to the Coeliac, the Superior and inferior Messenteric Arteries, except those of the Hepatic artery. These veins all uniting, i. e. the great and small Messenteric, the former consisting of those veins which return the blood from the small Intestines, ~~also~~, of. the ~~Middle~~ and right colic veins, passing over the Duodenum and posterior to the Pancreas, it receives the great Splenic veins which previously received the contents of the Gastro-epiploic and Coronary veins, with the lower Messenteric, which is composed of the Internal Haemorrhoidal and left Colic veins. These veins, as above stated, unite into One common trunk, called

the Vena Porta.- This great trunk receives also the Pancreatico-duodenalis and Cystic Veins.

Immediately on the entrance of the Vena porta into the Liver, it divides into two great branches which go off nearly at right angles, to form, what is called, the great Sinus of the Vena Portarum.- The right branch of this division is the shortest and largest; it divides into three smaller branches, which ramify minutely in the substance of the right lobe of the Liver. The left branch is considerably longer and proceeds to the extent of the great Sinus; near its end it is connected with the umbilical ligament, already mentioned. This branch, like the right, also ramifies minutely in the sub-

-stance of the Liver.

The Vena Portarum, after taking upon itself the office of an artery in conveying the materials for Secretion, and secreting the bile, empties itself into the Vena Cava hepatica.

The Pori biliarii conveying the bile from the Acini of which the Liver seems to be composed, gradually collect themselves into larger branches, untill they unite themselves into Two greater ones, corresponding to the different lobes of the Liver; these again unite, and form the Hepatic or great excretory duct of the Liver.

These Three great vessels are situated in such a manner, with regard to each other, that the Biliary duct is anterior; the Vena Porta posterior; and the artery to the left of them.

These Veins, which correspond to the Arteria Hepatica and Vena Portarum, unite at the superior part of the Liver, and form the Three great trunks (sometimes but Two, called the Hepatic Veins.- These veins empty themselves into the abdominal Cava. This great veſsel receives the blood of the Kidneys and inferior extremities; it runs up in a fiſsure, observed on the posterior surface of the Liver; and immediately previous to its penetrating the Diaphragm, receives the Hepatic Veins.- It is, sometimes, completely enveloped by the Liver, more particularly the Spigelian lobe.

"The Nerves of the Liver are derived from the Semilunar Ganglions of the of the great Sympathetic, or Intercostal.- These Ganglions furnish the

nerves which form the Solar Plexus; from this Plexus proceed a number of small nervous threads which go to form the network, denominated Hepatic Plexus. These Plexuses, situated behind the Stomach and above the Pancreas, completely surround the Hepatic artery, and vena portæ, and proceed with them in their minute ramifications, throughout the substance of the Liver,- They are also accompanied by several nervous threads from the Stomachic plexus, formed by the Par Vagum.

The Lymphatics of the Liver are extremely numerous, and have been divided into deepseated and Superficial, which freely communicate with each other, The deepseated unite and enter the Thoracic duct in the abdomen. The Superficial unite and enter the

same duct in the Thorax.

The intended limits of this eſsay, will not permit me to enter into the consideration of the minute structure of the Liver, nor do I conceive it neceſsary,- suffice it to say, the Parenchyma of the Liver, when presented to view, exhibits the appearance of a reddish bown colour, and when cut into, a moderately firm consistence. On the concave surface of the right lobe of the Liver is observed a pit or depreſsion, in which is situated the Gall bladder, which may be considered the common reservoir for the reception of the secretion of the Liver. It is of the shape of a Pear, and generally contains from one, to one and a half ounces of bile; it poſseſses a long curved neck, bending in such a manner upon itself, as sometimes, when

the Gall bladder is very much distended with bile, to form an acute angle, so, as to prevent the entire paſsage of its acrid fluid contents into the Cystic duct; this is the canal through which paſses the bile, from the Gall bladder to the Hepatic duct. The union of these two ducts forms the Ductus Communis Choledochus; larger than either of the former, and is about Three Inches in length. It proceeds through a small portion of the Pancreas and a little to the right of the Arteria Hepatica, penetrates the muscular coat of the Duodenum, in which it proceeds from half to nearly an Inch before it pierces the Villous coat, to open into the cavity of the Intestine. The peculiar rout of this duct, prevent the retrograde movement of the bile. This duct when paſsing the Pancreas generally receives

the duct from that gland, in which case, the Hepatic and Pancreatic secretions become mixed in the common duct, and are discharged in that state, into the cavity of the Duodenum; in some instances, however, this is not the case, the Pancreatic duct entering the Duodenum by a distinct orifice.

"The bile, after being secreted by the Liver, is conveyed from that organ by appropriate ducts to the Duodenum, where it is destined to effect a very sensible change upon the contents of the Intestines and to increase their natural peristaltic motion.

The bile is a viscid bitter fluid frequently varying in colour, sometimes a greenish, but almost always of a brownish yellow; at other times it is without colour.

To the indefatigable researches of Mr Thenard

and to Chymistry, that prolific source of improvement, we are indebted for a knowledge of the constituents of human bile. It is composed, as shewn by Mr. Thenarders experiments, of water, a yellow insoluable matter, Albumen, Resin, Soda, Phosphate of Soda and Lime; Sulphate and Muriate of Soda and Oxyd of Iron.

Nothing determinate has been ascertained in regard to the nature of the Pancreatic Secretion. To the observations of Mr. Fordyce, we are indebted for the only information we possess respecting it. He found it to be a colourless liquid, slightly saline to the taste; by evaporation Muriate of Soda was obtained, and the same salt was indicated also, by the Nitrate of Silver. Hence, we may conclude it to be analogous in composition, to Saliva.

In accordance with the course we have

adopted, we are next brought to the consideration of those diseases which arise from a disordered state of the Liver, or which depend for their existance, upon a deranged state of that organ.- In doing this, I shall not confine myself to any particular nosological arrangement, but treat of them in succession, as they may occur to me.

The Liver, in common with every other part of the living system, is subject to inflammation, which, by authors, has been divided into Acute and Chronic. It is the former, that falls under our immediate consideration; of the latter, I shall say but little.

Acute Hepatitis may be defined "Inflammatory fever, tension and pain in the right Hypochondrium, sometimes pungent like the Pleurisy, but generally

obtuse; the pain extending to the Clavicle and top of the right shoulder, difficult lying on the left side, dyspnœa, dry cough, vomiting and hiccough;" to this we may add, a jaundiced appearance of the Skin and eyes. The Three latter symptoms, however, are not constant attendants upon inflammation of the Liver, as some practical writers have observed, but only occasionally accompany that disease, as experience has fully shown. To the above discription may be added, a frequent, strong, and hard pulse, high coloured urine, a white dry tongue, sometimes yellow. In this disease, the bowels are generally constipated, the stools clearly indicating a defective biliary secretion.

"When jaundice appears, as a symptom in this disease, it is owing to the formation of Tumors in the Liver, which press on

the Ductus communis choledochus, the duct of the Gall bladder, the Hepatic duct, or the Porii biliarii; thus preventing the passage of bile into the Duodenum, it is therefore absorbed, and produces, in proportion to the degree of obstruction, either jaundice or the jaundiced appearance, we sometimes observe in Hepatitis.

Dr. Cullen supposes inflammation of the Liver to find its origin, in some of the following causes: external violence, applied over the situation of the Liver; certain passions of the mind, exciting the arterial system; violent exercise, acting upon the same principle; Intermittent and Remittent Fevers, and the internal and external application of cold; Here we have the same cause producing Hepatitis, that produces Pneumonia; hence, Dr. Cullen remarks, we in some instances have the two diseases joined

together, - to these he adds various solid concretions, or collections of liquid matter.

I have here simply enumerated Dr. Cullen's causes of Hepatitis, without pretending to determine which is the most frequent cause of that disease, or to account for the particular manner in which they act.

The principle indications to be fulfilled, in the treatment of Acute Inflammation of the Liver, are the reduction of preternatural excitement, and the restoration of the natural healthy functions of that organ.

The remedy which naturally occurs to us, as best calculated to answer the first indication, is blood letting carried to an extent proportionate to the strength of the pulse and violence of the disease. - As long, in fact, as the pain continues in the side and the pulse is full and strong, blood letting, says Dr Caldwell,

is the only remedy on which we can rely. Bleeding however, should not constitute our only remedy, in this stage of the disease. Purgatives, in the mean while, should be resorted to freely, and Calomel, the one on which we should place most confidence. To quicken its action, we may combine with it, Jalap. The Saline cathartics are also excellent purgatives, when our object is to reduce vascular action, and should therefore not be neglected, in this state of excitement. Enemas may here be resorted to, with much benefit and relief to the patient. As auxillary to these means, the antimonial preparations come in as very useful. The best of which is the Nitrate of Potash in combination with Emetic Tartar, in the form of the well known Nitrous antimonial pow=

der. To answer the second indication, Leeching, cupping, and after febrile action is sufficiently reduced, Blisters applied over the region of the Liver, never fail to facilitate the cure. Blisters, however, if resorted to at too early, a period, and previous to the reduction of arterial excitement, always prove a source of considerable mischief.

Should these means prove insufficient, Mercury should be administered with a view to salivation. If, when introduced into the system, it excites catharsis, it should be exhibited in combination with opium; the Vitrous or Dovers powder are excellent forms. It is desirable, in this disease, that the mercurial action be quickly established, it ought therefore to be administered with a liberal hand. In speaking of the utility of Mercury in Hepatitis Dr. Chapman

remarks that "all other modes of treatment, in confirmed Hepatitis, are only feeble temporizings, or dangerous tamperings."

On these remedies, in conjunction with the strict observance of the antiphlogistic regimen, rests the treatment of Acute Hepatitis.

The Symptoms which characterize the Acute, also distinguish Chronic Hepatitis: but in the latter disease, they are generally milder in degree and are also accompanied with more or less enlargement of the Liver.

The causes, of this kind of derangement in the Liver, are those, which tend to diminish in force the circulation of the Vena Portarum: such, as Intermittent fever, Intemperance, excessive heat, and a sedentary and indolent course of Life.

The treatment of this disease consists, in occasional bleeding; the application of Cups, Issues, and Blisters, to the right

Hypochrondrium, the latter kept constantly open by the use of blistering ointment.
A gentle mercurial Ptyalism continued for some time. The Nitric acid is exhibited, in this affection of the Liver, with decided and superior advantage, particularly, when the system is too much debilitated or in other respects unfit, to undergo a mercurial course. Exercise, in this disease, is of eſsential service and should not be neglected.
Hæmorrhoids and Ascites are more frequently connected with a deranged state of the Liver, than we are aware of. This is very intelligable on a little reflection. The Liver, in a Schirrus state, denies to the blood, from the lower Intestines, a free paſsage through that viscus; whence the veins from the Rectum become distended and en=larged, burst and discharge their contents.
The same obstruction to the paſsage of the blood through the Liver, giving rise to a preternatural

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distention of the blood Veſsels of the abdomen in general, produces an increased secretion of serum into that cavity: hence the formation of Ascites.† Dysentery and Cholera Morbus, primarily arising from Intestinal irritation, sooner or latter extends itself to the Liver, involving the whole biliary apparatus. - It is thus we have diseases, originally Intestinal, kept up for some time, by a deranged state of the Liver, Dyspepsia we not unfrequently find supported or aggravated by Hepatic derangement. Hamatemesis, in like manner, we observe connected with a disordered state of the Liver. Thus might we go on, were it neceſsary, enumerating disease after disease, in some way connected with the Liver; but such a course, we are persuaded, is entirely unneceſsary. - With Richerand we believe, "that a part belongs to the department of a Gland when it partakes in the motion affecting the latter, during the proceſs of secretion or when it is employed in functions subservient to that of the Gland. Thus, one may say, that the Spleen and

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† Caldwell's note to Cullen page 507

most of the Viscera of the abdomen are of the department of the Liver, since they furnish it with blood, on which to act. The Liver is also comprised in the sphere of activity of the Duodenum, since the distention of that Intestine irritates it, determines a more copious flow of its fluids, and a more abundant secretion of bile".

In the above remarks, we have clearly presented to view the extensive connection of the Liver and the consequent liability of that organ, to frequent derangement. If, in truth, almost any of the abdominal Viscera be made the subject of disease, they implicate, more or less, the organ now under consideration, which, from its importance in situation and function, sooner or latter, brings into sympathy the whole System.

Paſsed March 9th 1824
W. E. H
Dean

Acute Hepatitis
J R Lewis